

CLAIMS

What is claimed is:

1. A method of identifying an internet telephony provisioning entity to an internet telephony device, the method comprising:
 - storing a pre-provisioning contact and a unique device ID number in a non-volatile memory of the internet telephony device.
 - receiving a provisioning contact of a provisioning entity assigned to the device at a pre-provisioning server and storing the provisioning contact in association with a unique device ID number assigned to the device;
 - receiving an inquiry initiated from the device to the pre-provisioning server at the pre-provisioning contact, the inquiry comprising the unique ID number assigned to the device;
 - responding to the inquiry with a response that includes the provisioning contact that was stored in association with the unique device ID number of the device.
2. The method of claim 1, wherein the steps of receiving an inquiry and the step of responding to the inquiry are performed over a hyper text transport protocol link initiated by the device to the pre-provisioning server.
3. The method of claim 2, wherein:
 - wherein the step of storing the provisioning contact in conjunction with the unique device ID number comprises:
 - writing the unique device ID number to a key field of a record in a look-up table; and
 - writing the provisioning contact to a binary object field of the record in the look-up table.
4. The method of claim 3 wherein:
 - the provisioning contact is a provisioning contact selected from a group of

3 provisioning contacts consisting of a domain name of a provisioning entry point server
4 and a combination of an IP address and port number of a provisioning entry point
5 server; and
6 the entry point server is a server that provides the device with provisioning
7 information selected from a group of provisioning information consisting of a telephony
8 configuration parameters associated with the device ID number and identification of
9 provisioning servers associated with the device ID number which in turn provide
10 telephony configuration parameters.

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1 5. The method of claim 4, wherein:
2 the step of receiving a provisioning contact of a provisioning entity comprises
3 receiving:
4 the unique device ID number of the device; and
5 the provisioning contact of the provisioning entity
6 encapsulated in an IP frame from the provisioning entity.

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1 6. The method of claim 4, wherein:
2 the step of receiving a provisioning contact of a provisioning entity comprises
3 receiving:
4 the unique device ID number of the device; and
5 the provisioning contact of the provisioning entity
6 encapsulated in an IP frame from a point of sale system that assigned the
7 provisioning entity to the device.

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1 7. A pre-provisioning server for identifying an internet telephony provisioning entity
2 to an internet telephony device that has both a unique device ID number and a pre-
3 provisioning contact stored in its non-volatile memory; the pre-provisioning server
4 comprising:
5 a management application for receiving a provisioning contact of a provisioning
6 entity assigned to the device and storing the provisioning contact in association with a

7 unique device ID number assigned to the device;
8 a device application for:
9 receiving an inquiry initiated from the device to the pre-provisioning server
10 at the pre-provisioning contact, the inquiry comprising the unique ID number assigned to
11 the device; and
12 responding to the inquiry with a response that includes the provisioning
13 contact that was stored in association with the unique device ID number of the device.
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1 8. The pre-provisioning server of claim 7, further comprising a web server
2 application for receiving the inquiry and responding to the inquiry over a hyper text
3 transport protocol link initiated by the device to the pre-provisioning server.
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1 9. The pre-provisioning server of claim 8:
2 further comprising a look-up table comprising a key field and a binary object field;
3 and
4 wherein the management application stores the provisioning contact in
5 conjunction with the unique device ID number by:
6 writing the unique device ID number to the key field of a record in the look-
7 up table; and
8 writing the provisioning contact to the binary object field of the record in
9 the look-up table.
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1 10. The pre-provisioning server of claim 9, wherein:
2 the provisioning contact is a provisioning contact selected from a group of
3 provisioning contacts consisting of a domain name of a provisioning entry point server
4 and a combination of an IP address and port number of a provisioning entry point
5 server; and
6 the entry point server is a server that provides the device with provisioning
7 information selected from a group of provisioning information consisting of a telephony
8 configuration parameters associated with the device ID number and identification of

9 provisioning servers associated with the device ID number which in turn provide
10 telephony configuration parameters.

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1 11. The pre-provisioning server of claim 10, wherein:
2 the management application receives a provisioning contact of a provisioning
3 entity by receiving:
4 the unique device ID number of the device; and
5 the provisioning contact of the provisioning entity
6 encapsulated in an IP frame from the provisioning entity.

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1 12. The method of claim 10, wherein:
2 the management application receives a provisioning contact of a provisioning
3 entity by receiving:
4 the unique device ID number of the device; and
5 the provisioning contact of the provisioning entity
6 encapsulated in an IP frame from a point of sale system that assigned the
7 provisioning entity to the device.

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1 13. An internet telephony device comprising:
2 a non-volatile memory for storing:
3 a unique device ID number assigned to the device; and
4 a pre-provisioning contact;
5 an IP module for communicating with other IP devices over a frame switched
6 network using a network configuration and comprising a network configuration module
7 for obtaining the network configuration from a DHCP server;
8 an internet telephony provisioning module for:
9 sending an inquiry to the pre-provisioning server at the pre-provisioning
10 contact stored in the non-volatile memory, the inquiry comprising the unique ID number
11 stored in the non-volatile memory;
12 receiving a response to the inquiry that includes a provisioning contact;

13 sending a provisioning inquiry to a provisioning entity associated with the
14 provisioning contact; and
15 obtaining provisioning information in response to the provisioning inquiry,
16 the provisioning information selected from a group of provisioning information consisting
17 of a telephony configuration parameters associated with the device ID number and
18 identification of provisioning servers associated with the device ID number which in turn
19 provide telephony configuration parameters.
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1 14. The internet telephony device of claim 13, wherein:
2 the internet telephony provisioning module:
3 sends the inquiry to the pre-provisioning server at the pre-provisioning
4 contact by initiating a hyper text transport protocol link to the pre-provisioning server;
5 and
6 receives the response to the inquiry on the hyper text transport protocol
7 link.
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1 15. The internet telephony device of claim 14, wherein the provisioning contact is a
2 provisioning contact selected from a group of provisioning contacts consisting of a
3 domain name of a provisioning entry point server and a combination of an IP address
4 and port number of a provisioning entry point server.
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1 16. The internet telephony device of claim 15, wherein the internet telephony
2 provisioning module:
3 stores the provisioning contact in the non volatile memory in response to
4 receiving the response that includes a provisioning contact; and
5 sends the inquiry to the pre-provisioning server at the pre-provisioning contact if
6 the provisioning contact in response to determining that the provisioning contact is not
7 available in the non volatile memory.
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1 17. The internet telephony device of claim 15, wherein the internet telephony

2 provisioning module:

3 determines whether telephony provisioning resources are included in a DHCP
4 response provided by the DHCP server; and

5 sends a provisioning inquiry to a provisioning entity associated with the
6 provisioning contact in response to determining that the DHCP response does not
7 include telephony provisioning resources.

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1 18. The internet telephony device of claim 17, wherein the internet telephony
2 provisioning module:

3 stores the provisioning contact in the non volatile memory in response to
4 receiving the response that includes a provisioning contact; and

5 sends the inquiry to the pre-provisioning server at the pre-provisioning contact in
6 response to determining that the provisioning contact is not available in the non volatile
7 memory.

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1 19. A method of discovering internet telephony provisioning information, the method
2 comprising:

3 storing a unique device ID number assigned to a device and a pre-provisioning
4 contact in a non volatile memory;

5 obtaining a network configuration from a DHCP server; and

6 using the network configuration to:

7 send an inquiry to a pre-provisioning server at the pre-provisioning
8 contact, the inquiry comprising the unique ID number;

9 receiving a response to the inquiry that includes a provisioning contact;

10 sending a provisioning inquiry to a provisioning entity associated with the
11 provisioning contact; and

12 obtaining provisioning information in response to the provisioning inquiry,
13 the provisioning information selected from a group of provisioning information consisting
14 of a telephony configuration parameters associated with the device ID number and
15 identification of provisioning servers associated with the device ID number which in turn

16 provide telephony configuration parameters.

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1 20. The method of claim 19, wherein:

2 the step of sending the inquiry to the pre-provisioning server at the pre-
3 provisioning contact comprises initiating a hyper text transport protocol link to the pre-
4 provisioning server and sending the inquiry on the hyper text transport protocol link; and
5 the step of receiving the response to the inquiry comprising receiving the
6 response on the hyper text transport protocol link.

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1 21. The method of claim 20, wherein the provisioning contact is a provisioning
2 contact selected from a group of provisioning contacts consisting of a domain name of a
3 provisioning entry point server and a combination of an IP address and port number of a
4 provisioning entry point server.

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1 22. The method of claim 21:

2 further comprising storing the provisioning contact in the non volatile memory in
3 response to receiving the response that includes a provisioning contact; and
4 the step of sending the inquiry to the pre-provisioning server at the pre-
5 provisioning contact is performed in response to determining that the provisioning
6 contact is not available in the non volatile memory.

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1 23. The method of claim 21:

2 further comprising determining whether telephony provisioning resources are
3 included in a DHCP response provided by the DHCP server; and
4 the step of sending a provisioning inquiry to a provisioning entity associated with
5 the provisioning contact is performed in response to determining that the DHCP
6 response does not include telephony provisioning resources.

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1 24. The method of claim 23,

2 further comprising storing the provisioning contact in the non volatile memory in

3 response to receiving the response that includes a provisioning contact; and
4 the step of sending the inquiry to the pre-provisioning server at the pre-
5 provisioning contact is performed in response to determining that the provisioning
6 contact is not available in the non volatile memory.
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